REMARKS

Claims 1-12 are now pending in the application. Claims 11-12 are new. Support for the foregoing amendments can be found throughout the specification, drawings, and claims as originally filed. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ciscon et al. (U.S. Pub. No. 2002/0004827) in view of Srivastava (U.S. Pat. No. 6,684,331). This rejection is respectfully traversed.

The Examiner asserts that the feature "management at an interface layer for controlling multicasting characteristics corresponding to interfaces" in claim 1 is disclosed by Ciscon (e.g., abstract and para. [0014]). Applicant respectfully traverses the Examiner's assertion.

The abstract and para. [0014] of Ciscon at best disclose a multi-layered network, a network monitor and a network controller. The multi-layered network has a plurality of OSI reference model layers functioning therein. The network monitor monitors at least one OSI reference model layer functioning, determines that a QoS event has occurred in the multi-layered network, and determines that the QoS event occurred at a layer N in the OSI reference model. The network controller responds to the QoS event in the multi-layered network by changing the network provisioning at a layer less than N.

Applicant respectfully submits that Ciscon does not teach or suggest the above features for at least the following reasons:

The concept of OSI reference model layers in Ciscon is a standard model of network data communication, and the method provided by Ciscon relates to data communication in a multi-layered network, which is applied to a network and needs to configure specific devices, such as the network monitor and network controller, to manage the QoS event occurred in OSI reference layers of the network. In contrast, the interface layer in claim 1 is a level of multicasting management configuration in an entity having multicasting function, such as an edge service router (see para [0016] as originally filed). In other words, the "interface layer" of claim 1 represents the management at a level of multicasting interface. Therefore, the OSI reference layers differ from the interface layer of the claim 1.

Ciscon at best discloses that the network monitor monitors and determines that a QoS event has occurred in the multi-layered network and the network controller responds to the QoS event in the multi-layered network. Therefore, Ciscon is directed to a QoS event monitor and controller that secures the reliability of data communication of the network. In contrast, claim 1 is directed to management at an interface level for controlling multicasting characteristics corresponding to interfaces; the management at interface level is directed to management of multicasting characteristics corresponding to multicasting interfaces. Thus, the objects of management in Ciscon and claim 1 differ, which leads to different implementation.

Further, the Examiner asserts that the features of "management at data link layer for controlling multicasting characteristics corresponding to data links, management at user layer for controlling multicasting characteristics corresponding to particular users" in claim 1 are anticipated by Ciscon (e.g., abstract, and figure 1). Applicant respectfully traverses the Examiner's assertion

Figure 1 of Ciscon discloses an application data flow path through functional layers of a communication system. The basis of the functional layers is the OSI model. In this model, information may be communicated between first and second users by traversing through the functional layers.

Applicant respectfully submits that Ciscon does not teach or suggest the above features for at least the following reasons:

The concept of OSI reference model layers in Ciscon is a standard model of network data communication, and the method provided by Ciscon relates to data communication in a multi-layered network, which is applied to a network and needs to configure specific devices, such as the network monitor and network controller, to manage the QoS event occurred in OSI reference layers of the network. In contrast, the data link layer and user layer in claim 1 are levels of multicasting management configuration in an entity having multicasting function, such as an access server or edge service router. In other words, the "data link layer" and "user layer" represent the management at a level of data link and the management at a level of user respectively.

Ciscon is at best directed to QoS event monitor and controller that secure the reliability of data communication of the network. In contrast, claim 1 is directed to management at data link layer for controlling multicasting characteristics corresponding to data links and management at user layer for controller multicasting characteristics corresponding to users. The management at data link level is directed to management to multicasting characteristics corresponding to data links and the management at user link level relates to management to multicasting characteristics corresponding to users. The objects of management in Ciscon and claim 1 differ, which leads to different implementation.

Figure 1 of Ciscon at best discloses a point-to-point data communication through the standardized ISO-OSI layers, and the data is communicated between two users through traversing through the OSI layers. Ciscon at best appears to disclose a point-to-point QoS controlling scheme. In contrast, claim 1 is directed to multicasting characteristics management at different levels, i.e., a point-to-multipoint multicasting controlling scheme. The point-to-point QoS controlling scheme disclosed by Ciscon can not teach or suggest a point-to-multipoint multicasting controlling scheme.

Further, the Examiner asserts that the features of "at each layer, setting control blocks that are respectively comprised of multicasting characteristic data corresponding to said each layer" in claim 1 is anticipated by Ciscon (e.g., abstract and para. [0003], para. [0013] and para. [0014]). Applicant respectfully traverses the Examiner's assertion.

Ciscon at best appears to disclose a multi-layered communication system that is implemented with a broadband communications platform that enables quality of application service delivery and user control over the priority of information delivery flow.

Applicant respectfully submits that Ciscon does not teach or suggest the above features for at least the following reasons:

The control blocks of the layers in claim 1 comprise multicasting characteristic data corresponding to each layer respectively. In contrast, neither the network monitor nor the network controller which are both adapted for QoS controlling of Ciscon has multicasting characteristic data.

Ciscon discloses that a network monitor and a network controller are adapted for monitoring and controlling QoS of all the OSI reference model layers. In contrast, in claim 1, each of the interface level, data link level and user level has a control block

which has multicasting characteristic data corresponding to each layer.

Further, the Examiner asserts that the features of "establishing a data relationship among the three layers of control blocks" is disclosed by Ciscon (e.g., par [0073] and figure 4). Applicant respectfully traverses the Examiner's assertion.

Cisco at best appears to disclose a network controller that responds the QoS event in a network element. Specifically, a resource database, interworking with the network controller and the network monitor, organizes communication resources of the network element according to where the communication resources fit in the OSI reference model, and additionally, the resource database maintains the relationship between the various layers in the OSI model for the communication resources.

Applicant respectfully submits that Ciscon does not teach or suggest the above features for at least the following reasons:

The resource database disclosed by Ciscon stores and maintains the relationship of communication resources among various layers in OSI model. For example, the communication resources include communication links. In claim 1, however, control blocks stores the multicasting characteristic data. The relationship of communication resources in Ciscon and the multicasting characteristic data in claim 1 differ. The relationship of communication resources is used for QoS controlling in data communication, while the multicasting characteristic data is used for multicasting controlling.

Further, the Examiner asserts that the features of "managing a user of the multicasting group using the data relationship among the three layers of control blocks" is disclosed by Ciscon (e.g., abstract, figure 3 and figure 4). Applicant respectfully traverses the Examiner's assertion.

Figure 3 of Ciscon at best discloses connections among the network monitors, the network controllers, the resource database and the network element. Figure 4 of Ciscon at best appears to disclose a method for providing broadband communication over a multi-layered network, including: monitoring at least one OSI reference model layer functioning; determining that a QoS event occurred in the multi-layered network; determining the QoS event occurred at layer N; responding the QoS event by changing the network provisioning at a layer less than N, and signaling that the network provisioning has been updated at a layer less than N.

Applicant respectfully submits that Ciscon does not teach or suggest the above features for at least the following reasons:

As presented above, the control blocks for the three levels in claim 1 have the multicasting characteristic data. The relationship among the control blocks are among the multicasting characteristic data of the three levels. The relationship among the multicasting characteristic data of the three levels is used for controlling activities of users of multicast groups, such as joining a group or leaving a group. In contrast, Ciscon at best appears to disclose controlling QoS by using the relationship of communication resources among various layers in OSI model. Ciscon fails to teach or suggest controlling users of multicasting groups by using the relationship of multicasting characteristic data among the three levels.

The Examiner acknowledges that Ciscon does not disclose the management system including the multicasting proxy. The Examiner, however, asserts that Srivastava discloses multicasting proxy (e.g., abstract, col. 5, lines 1-10, multicast proxy service node). Applicant respectfully traverses the Examiner's assertion.

Srivastava at best appears directed to a method for establishing secure communication among multiple multicast proxy service nodes of domains. The domains are organized in a logical tree and each domain stores a logical tree that organized the multicast proxy service nodes. Each domain also comprises a group manager at the root node of the binary tree, a multicast key distribution center, multicast service agent and directory service agent and key distribution center. The multicast proxy service node refers to multicast service agent, multicast KDC and/or group controller. A multicast group member joins or leaves a group by publishing a message. The local key distribution center and multicast service agent obtains the identity of the publisher and based on the ID value, and a secure channel is established with the DSA of the group member's domain. Srivastava at best appears directed to a multicast proxy service node which only stores a group session key and a private key.

In contrast, claim 1 is directed multicasting management performed in a multicasting proxy entity such as access server and edge service router, and the multicasting management is divided into three levels: interface level, data link level and user level. Although Srivastava may mention a multicast proxy service node, the multicast proxy service node only stores a group session key and a private key. Srivastava fails to teach or suggest configuring three levels of multicasting management in the multicast proxy service node.

In view of the foregoing, Applicant submits that claim 1 and its dependent claims 2-11 define over the art cited by the Examiner.

NEW CLAIMS

Claims 11-12 are new. Claim 11 defines the core edge layer network device of claim 3 as an Edge Service Router (ESR). Applicant submits that claim 11 defines over the art cited by the Examiner by virtue of its dependency on claim 1. Applicant further submits that claim 12 defines over the art cited by the Examiner for one or more of the reasons set forth above regarding claim 1.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: April 15, 2008

By: /Joseph M. Lafata/
Joseph M. Lafata, Reg. No. 37,166

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

JML/PFD/evm